

include plastiform, locking tapers, or hook and loop backings. The inventive tape can be used in a wide variety of industrial applications which benefit from fluid management, such as aerospace (i.e., reduction of corrosion by evaporative and collective mechanisms for fluid), turbine air compressors (from improvement in condensation knockout efficiency), oil separation in industrial processes, condensate removal in refrigeration, condensate collection efficiency in appliance applications, spill control in electronic applications (i.e., computer keyboards), deicing by means of continuous fluid removal, removal and/or collection of hazardous fluids (i.e., solvents, hydraulic fluids, acidic media or basic media), delivery of fluids with increased efficiency (e.g., inks, coatings, fuels, fragrances, etc.), removal of specific liquids (e.g., water, inks or other fluid sprays) from a surface, and detection of hazardous or non hazardous fluids by combination with detection devices.

[0187] In this disclosure several alternative embodiments of the invention are disclosed. It is understood that the features of these various embodiments may be compiled in any desired combination, configuration or assembly, depending upon the fluid flow application involved. As such, various modifications and alterations of this invention will become apparent to those skilled in the art without departing from the scope and spirit of the invention.

What is claimed is:

1. A laminate liquid disposal assembly comprising:

a liquid control layer having a top side and a bottom side, the top side having a liquid landing zone for receiving liquid thereon and a liquid removal zone, and the top side having a microstructure-bearing surface with a plurality of channels thereon that facilitate directional flow control of the liquid across the top side from the liquid landing zone to the liquid removal zone;

a substrate layer;

means for attaching the bottom side of the liquid control layer to the substrate layer; and

means for removing the liquid from the liquid removal zone of the top side of the liquid control layer.

2. The laminate liquid disposal assembly of claim 1, and further comprising:

a porous cap layer disposed over the landing zone of the top side of the liquid control layer.

3. The laminate liquid disposal assembly of claim 1 wherein the channels have channel ends, and wherein the removing means withdraws the liquid from the channels adjacent one of the channel ends thereof.

4. The laminate liquid disposal assembly of claim 3 wherein the removing means withdraws the liquid from the channels adjacent both channel ends thereof.

5. The laminate liquid disposal assembly of claim 1 wherein the removing means comprises:

an absorbent material disposed in communication with the liquid removal zone.

6. The laminate liquid disposal assembly of claim 1 wherein the channels are substantially parallel throughout their lengths.

7. The laminate liquid disposal assembly of claim 1 wherein the removing means includes a fluid collection manifold in communication with the channels in the liquid removal zone.

8. The laminate liquid disposal assembly of claim 7 wherein the removing means includes means for creating a pressure gradient along the channels and through the fluid collection manifold.

9. The laminate liquid disposal assembly of claim 1 wherein the liquid control layer is a polymeric film.

10. The laminate liquid disposal assembly of claim 1 wherein the microstructure-bearing surface of the liquid control layer has a characteristic-altering coating thereon.

11. The laminate liquid disposal assembly of claim 1 wherein the polymeric film includes a characteristic altering additive.

12. The laminate liquid disposal assembly of claim 11 wherein the additive is selected from the groups consisting of flame retardants, hydrophobics, hydrophylics, antimicrobial agents, inorganics, metallic particles, glass fibers, fillers, clays and nanoparticles.

13. The laminate liquid disposal assembly of claim 1 wherein the attaching means is a pressure sensitive adhesive.

14. The laminate liquid disposal assembly of claim 13 wherein the pressure sensitive adhesive is formed as a microstructure-bearing surface.

15. The laminate liquid disposal assembly of claim 1 wherein the removing means includes a liquid drip collector.

16. The laminate liquid disposal assembly of claim 1 wherein the liquid landing zone is at a temperature sufficiently lower than ambient to cause liquid to condense on the channels thereon.

17. The laminate liquid disposal assembly of claim 1 wherein the liquid is selected from the group consisting of water, ink, lubricant, lavatory fluid, fuel, fragrance or combinations thereof.

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